Math Writing Rubric

Students shows understanding of mathematical thinking and reasoning through effective use of ICFLP!	Students errors in mathematics can be conceptual, factual, computational, and/or procedural, and may occur for a number of reasons, but can be discovered and identified using error analysis of ICFLP.		
	3	**2**	**1 | 0**
Image (Visual Representation)	Student illustrates **effective** use of visual representations (i.e., models, schematics, table, or diagrams) that correspond to concept(s) that governs the problem and matches the procedures used.	Student illustrates **limited** use of visual representations and their connection or correlation to the concept(s) that governs the problem and matches the procedures used.	Student **does not use** model, schematics, table, or diagram; or visual representation does not correspond to procedure or algorithm used.
Conceptual Understanding	Student illustrates **complete** understanding of number, operations, and the concept(s) that governs the problem.	Student demonstrates **partial** understanding of the number, operations, and mathematical concept(s) that govern the problem	Student has **misconception of** the number and operation used to solve the problem
Factual Knowledge	Student **correctly** declares numbers and quantities in written communications.	Student's use of facts is **incomplete or exhibits** many errors.	Student **incorrectly declares** number and quantities in problem or miscalculates number and misuse of operations.
Language Knowledge	Student understanding of number and operations and concepts **matches** the students use of mathematical language; effective use of mathematical language to communicate mathematical thinking and reasoning.	Student use of language to communicate mathematical thinking and reasoning is **limited to basic** mathematical language and/or common language usage.	Student's **minimal use of** formal mathematical language to communicate mathematical thinking and reason; relies mostly on everyday words and basic sentence structure.
Procedural Knowledge	Student **correctly and skillfully** uses algorithms and heuristics needed to solve the problem and can connect procedures and algorithms to concepts that govern the problem.	Students use of procedures or algorithms is **faulty or incomplete.**	Student **incorrectly uses** procedures or algorithms, leaves out steps, or takes short-cuts but does not understand why the procedures works.
Written Communications	Overall, student **skillfully uses** grammar, syntax, mathematics vocabulary, and images to communicate mathematical thinking and reasoning.	Student's demonstrates reasonable use of grammar, syntax, mathematics vocabulary, and images to communicate mathematical thinking and reasoning, but **struggles with** coherence, clarity, and sentence structure	Student sentences **lacks** coherence and clarity, and sentence structure is **elementary and does not effectively** communicate mathematical thinking and reasoning.